

ABSTRACT

An injection valve is provided with vibration to dislodge residue therefrom and to thus avoid injection valve clogging. A wave generator which preferably generates an ultrasonic sine wave, is operatively coupled to the vaporization region of the injection valve (i.e., via the injection block, via a piezoelectric valve controller, etc.). The wave may be applied to the injection valve whenever vaporization takes place, in which case a removable trap is coupled between the injection valve and the processing chamber. Alternatively, the sonic wave may be applied to the injection valve only in conjunction with a chamber cleaning process.